

## What is claimed is:

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- 1. A brazed ceramic ring sandwich for a lithium ion battery comprising a first ring of ceramic material; a second ring of titanium; a third ring of a titanium alloy of aluminum and vanadium Ti-6Al-4V; a gold alloy braze with a gold content by weight of more than 50%; wherein said gold alloy braze attaches said second ring of titanium to said first ceramic material; wherein said gold alloy attaches said third ring of titanium alloy to the other edge of the ceramic ring.
  - 2. The brazed ceramic ring sandwich of claim 1 wherein the ceramic material is selected from the group consisting of aluminum oxide, zirconium oxide and zirconium oxide with 3% yttrium.
  - 3. The brazed ceramic ring sandwich of claim 1 wherein the gold alloy braze is 96.4% gold, 3.0% nickel and 0.6% titanium.
  - 4. The brazed ceramic ring sandwich of claim 1 wherein the ceramic ring is least 10 μm in height
  - 5. The brazed ceramic ring sandwich of claim 1 wherein the height of the titanium ring must be at least 30  $\mu$ m; and wherein the height of the titanium alloy, Ti-6Al-4V, ring must be at least 30  $\mu$ m.
  - 6. A method for constructing the ceramic ring sandwich comprising the steps of brazing together a sheet of a ceramic material with a titanium sheet, on one side, and a titanium alloy, Ti-6Al-4V, sheet on the side; cutting the sandwich to a desired shape with a laser.
  - 7. The method of claim 6 comprising the step of selecting ceramic material from the group consisting of aluminum oxide, zirconium oxide and zirconium oxide with 3% yttrium.

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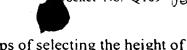
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- 8. The method of claim 6 comprising the step of utilizing a gold alloy braze consisting mainly of 96.4% gold, 3.0% nickel and 0.6% titanium.
- 9. The method of claim 6 comprising the step of selecting the height of the ceramic ring to be at least 10 µm.
- 10. The method of claim 6 comprising the steps of selecting the height of the titanium ring to be at least 30  $\mu$ m; and selecting the height of the titanium alloy, Ti-6Al-4V, ring to be at least 30  $\mu$ m.
- 11. A method for constructing a battery case comprising the steps of forming a cylinder of titanium alloy, Ti-6-Al-4V; forming an end-cap of titanium alloy, Ti-6-Al-4V, forming a ceramic ring sandwich of a ring of ceramic, a ring of titanium and a ring of a titanium alloy, Ti-6Al-4V, brazing said ceramic ring together with said titanium and titanium alloy rings wherein the ceramic ring is in the middle; forming a titanium end-cap with a feedthrough hole; welding the titanium alloy ring of the ceramic ring sandwich to the titanium alloy cylinder by laser welding; welding the titanium end-cap to the titanium ring of the ceramic ring sandwich by laser welding; and welding the titanium alloy end-cap to the titanium alloy cylinder.
- 12. The method of claim 11 comprising the step of selecting ceramic material from the group consisting of aluminum oxide, zirconium oxide and zirconium oxide with 3% yttrium.
- 13. The method of claim 11 comprising the step of utilizing a gold alloy braze consisting mainly of 96.4% gold, 3.0% nickel and 0.6% titanium.
- The method of claim 11 comprising the step of selecting the height of the ceramic ring to be at least  $10 \, \mu m$ .





15. The method of claim 11 comprising the steps of selecting the height of the titanium ring to be at least 30 µm; and selecting the height of the titanium alloy, Ti-6Al-4V, ring to be at least 30 µm.

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